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ABSTRACT

The preparation and qualifications of Pennsylvania vocational education (VE) teachers were examined in a statewide survey. Survey instruments were mailed to all 152 practicing VE teachers in Pennsylvania who had received a Pennsylvania Vocational Instructional II Certificate in 1990-1998. Thirty-four (22.37%) of the VE teachers completed questionnaires. Thirty (88%) of the respondents had worked in their occupational field for 5 or more years before becoming a teacher. Fifteen (44.1%) had a four-year degree or higher, and 97.1% were teaching in the occupational field in which they are certified. Twenty-six (78.8%) considered themselves well prepared or very well prepared to implement state or school district curriculum and performance standards, and 97.0% reported feeling well prepared or very well prepared to delivery instruction utilizing effective teaching methods. However, 4 of the 16 respondents who answered the question about the adequacy of existing teacher education stated that teacher education programs must provide more academic content for VE teachers. An in-depth study of a larger population of VE teachers was recommended to provide the information base needed for thorough assessment of VE teacher education program development in the 21st century. (Contains 17 references.) (MN)

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PENNSYLVANIA VOCATIONAL TEACHER PREPAREDNESS: IMPLICATIONS FOR TEACHER DEVELOPMENT IN THE 21ST CENTURY

Victor K. A. Gbomita

Introduction

The US educational system is preparing to educate 53 million young people in the next ten years and needs to hire 2.2 million teachers over the same period (Riley, 1999). Several measures have been proposed to meet the challenges that come with such a huge responsibility. In his State of the Union address in January 1999, President Clinton proposed to hire 100,000 teachers immediately to improve the quality of teaching through reduced class sizes (Phi Delta Kappa, 1999). On its part, the US Congress took measures in the appropriations Act, as well as, in the reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA) that will begin to address the quality of teaching in the coming millenium (US Congress, HR 3194). In order to understand the needs to improve the quality of teaching in the 21st classroom, the US Department of Education examined the quality of teacher preparation in the US public schools and issued a report on teacher quality - its preparation and qualifications (US Dept. of Education, 1999: NCES 1999-080). With so much at stake, the search for a strategy to prepare teachers very well in the 21st Century has generated substantial interest among educational reformers, national and state administrators, parents and several other interested parties (Rigden, 1997).

Faced with concerns over the quality of teaching and the challenge to prepare teachers very well for Pennsylvania's classrooms in the 21st Century, the administrators of the Commonwealth have taken several measures to address the issues. Early in 1999, Governor Ridge unveiled his Teachers for the 21st Century Initiative: the Pennsylvania Alternative Certification Program to provide an alternative route to teacher certification in the Commonwealth (Pennsylvania Department of Education, 1999). Over the past 25 years, Pennsylvania, in addition to the traditional approach, has utilized the alternative approach to prepare vocational teachers. The alternative approach enabled teacher preparation to have a direct and immediate impact on vocational students. In its role, the State Board of Education has adopted changes to the governing rules for teacher preparation and qualification in the Commonwealth that will enable the State meet the classroom needs of the 21st Century. In addition, Pennsylvania has initiated the Educational Technology: PA MOUS 2000 Training and Certification Program, a unique

partnership initiative that has brought together Microsoft Corporation and organs of the State to train and certify the Commonwealth's teachers in cutting-edge technology for the classroom (www.121.org; www.parentsineducation.com).

However, in its recent study of teacher quality in the public schools - its preparation and qualifications - the US Department of Education noted that less than half of public school teachers felt very well prepared to meet the challenges in the public school classroom (US Dept. of Education, 1999). The study focused primarily on teachers with academic assignments and did not reflect the sentiments of public school teachers engaged in vocational education.

Problem Statement

Since the study by the Department of Education on teacher quality focused primarily on teachers with academic assignments, specifically, in English/language arts, social studies/social sciences, foreign language, mathematics and science, it did not reflect the preparedness of public school vocational teachers. Therefore, while the study provided a rationale for addressing issues concerning teacher quality in the academic classroom, it also created the need to understand the quality of vocational teachers in order to provide a basis for improving their preparation and qualification for the classroom in the 21st Century.

Purpose of Study

The purpose of the study was to examine vocational teacher preparation and qualification and provide an insight into vocational teacher preparedness for the 21st Century classroom, using Pennsylvania's field-based, competency-based teacher education program, an alternative approach for preparing vocational teachers in the Commonwealth's public schools.

Methods and Procedures

A survey questionnaire was developed, using information from the report of the Department of Education on teacher quality and Temple University's field-based, competency-based vocational teacher education program.

Temple University is one of three institutions granted permission to prepare teachers for Pennsylvania's vocational instructional certificates.

The population for the study was all vocational teachers prepared through Temple University's field-based, competency-based teacher education program and who received Pennsylvania's Vocational Instructional II Certificate between 1990 and 1998. One hundred and fifty-two practicing teachers were identified.

A survey questionnaire was mailed to all 152 vocational teachers and 34 or 22.37 percent responses were returned. A test for non-respondent bias was conducted to compare the early respondents with the late respondents. The test yielded a Pearson correlation coefficient of .91 ($r = .91$, $p \leq 01$), thus, confirming that the respondents adequately represented the population.

A factor analysis of the data resulted in 9 components that formed the basis for discussing the implications of the findings. The data were analyzed using the Statistical Package for the Social Sciences (SPSS 4.1).

Components from the Factor Analysis

- Academic preparation - content, context, nature and scope
- Curriculum and standards - development, evaluation, implementation and utilization
- Diversity in the classroom - working with students with diverse needs and backgrounds
- Learning environment - access, facilities and resources
- Occupational competency - subject area expertise
- Professional development - continued learning activities
- Support systems - collaborative activities, teacher networks, administrative, community and parental support
- Teaching methods and skills
- Technology - evaluation, selection and integration.

Figure 1.

Findings

The key findings are presented under two categories: summary of the situational data and implications of the findings for teacher preparation.

Summary of the situational data

- A little more than 88 percent, (30/34), of the vocational teachers worked in their occupational fields for 5 years or more before making the career change to teaching.
- The vast majority of the vocational teachers, (31/34 or 91.2 percent), are in the age brackets of 36 years or over.
- A little more than 38 percent, (13/34), of the respondents teach in part-time AVTS, 35.3 percent, (12/34), teach in full-time AVTS, and 17.6 percent, (6/34), teach in Comprehensive High Schools and Skills Centers.
- A little more than 44.1 percent, (15/34), of the respondents have a 4-year college degree (BS) or higher.
- Nearly all the vocational teachers, (97.1 percent or 33/34), teach in the occupational field in which they are certified.
- Twenty-five percent, (4/16), of the vocational teachers suggested that the teacher education program must provide more academic content for vocational teachers. Nearly 19 percent, (3/16), of the vocational teachers suggested that there must be more training in classroom management techniques. Another 19 percent, (3/16), of the vocational teachers suggested that more training should be provided in assessment and evaluation techniques. Also, a similar number, (19 percent or 3/16), suggested that training in mentoring must be included in the vocational teacher education program.

Implications of findings for teacher preparation

The findings have several implications for vocational teacher preparation. Specifically, the following implications are apparent.

1. A little more than 44 percent of the vocational teachers have a 4-year college degree (BS) or higher and 73.5 percent reported that they felt well prepared or very well prepared to continue with academic coursework. Another 82.4 percent reported that their academic work contributed very much to their preparation. This situation may explain why 25 percent of the respondents suggested in the open-ended section of the questionnaire that vocational teacher education must include more academic material in its programs. This situation may further suggest that vocational teachers were prepared for continued professional development and lifelong learning. However, it may also suggest that vocational teacher preparation programs need to emphasize the academic content.
2. A large majority, 78.8 percent or 26/33, of the vocational teachers reported feeling well prepared or very well prepared to implement state or school district curriculum and performance standards. An equally large number, 77.4 percent or 24/31, indicated that utilizing state or school district curriculum contributed somehow to their teacher preparation. The finding differs from the finding of the Department of Education which reported that only 36 percent of academic teachers felt very well prepared to implement state or school district curriculum and performance standards. But the overwhelming appreciation of the role of state curriculum and performance standards in teacher preparation may suggest that teacher education programs must emphasize both curriculum and standards implementation.
3. A little more than one-half, 52.9 percent or 18/33, of the respondents indicated that they felt well prepared or very well prepared to support the instructional technology needs of students with disabilities. However, only 38.2 percent or 13/31, of the vocational teachers reported feeling well prepared or very well prepared to serve the needs of students with limited proficiency in English. The finding is consistent with that of the Department of Education which reported that only 20 percent of academic teachers felt very well prepared to meet the needs of culturally diverse students. This situation may suggest that vocational teachers were not equipped to work with students with culturally diverse backgrounds and, consequently, may not be very well prepared to serve the needs of all students. On the other hand, a very large number of vocational teachers, 84.8 percent, indicated that

understanding the need to support students with disabilities contributed very much to their teacher preparation. Similarly, a large number of vocational teachers, 64.0 percent or 16/25, reported that understanding the need to support students with culturally diverse backgrounds contributed somewhat to their teacher preparation. Therefore, there is perhaps the need for vocational teacher education to focus on the preparation of teachers to serve all students, including those with culturally diverse backgrounds.

4. Nearly 90.0 percent, (30/34), of the vocational teachers reported that the learning environment contributed very much to their preparation for teaching. This suggests that a large number of the vocational teachers were content with the learning environment. This suggestion, in turn, may indicate that the alternative teacher education approach, the field-based program, provides a favorable learning condition for preparing teachers.
5. Nearly all the vocational teachers, 97.1 percent or 33/34, teach in the occupational field in which they were certified or licensed and, all of them, 100 percent, reported that they felt well prepared or very well prepared to provide instruction in their occupational area. The finding contrasts the finding reported by the Department of Education which suggested that many academic teachers taught subjects they were not very well qualified to teach. Furthermore, in the present study, 93.7 percent or 30/32 of the vocational teachers reported that having an in-depth knowledge of their subject area contributed very much to their preparation for teaching. Perhaps, the thorough knowledge of their occupation freed the teachers to let them focus on pedagogical competency requirements. Given this situation, vocational teacher preparation programs may have to focus on pedagogical skills, as well as continued technical development.
6. A little more than three-fourths of the vocational teachers reported that all forms of support systems contributed very much to their preparation for teaching. The finding is consistent with a suggestion to include mentor training in the teacher education program, and that suggestion was made by 19 percent, (4/16), of the teachers who responded to the open-ended comments on the questionnaire. However, only 43.8 percent or 14/32, reported feeling well prepared or very well prepared to help other teachers integrate computer technology into their curriculum. May be, it is necessary in the teacher education program to prepare teachers to utilize the available support systems, such as teacher networks and small learning communities, and also, so that they can train others to utilize the support systems.
7. Nearly all the vocational teachers, 97.0 percent or 32/33, reported that they felt well prepared or very well prepared to deliver instruction utilizing effective teaching methods. Similarly, nearly all the vocational teachers, 94.1 percent or 32/34, reported that the knowledge of effective teaching strategies contributed very much to

their preparation for teaching. It is apparent that crucial and effective teaching strategies were successfully provided to enable the teachers to function effectively in the classroom. The finding differs from the finding in the Department of Education's study which reported only 41 percent of academic teachers feeling very well prepared to implement new teaching methods. However, 19 percent, (4/16), of the teachers who responded to the open-ended comments on the questionnaire suggested that there was a need to extend the training in student performance assessment and evaluation techniques in the teacher education program. This suggestion is consistent with the finding in the Department of Education's report suggesting that only 28 percent of academic teachers felt very well prepared to use student performance assessment techniques.

8. A little more than three-fourths, (76.4 or 26/34), of the vocational teachers reported feeling well prepared or very well prepared to integrate educational technology into their curriculum. Also a slightly lower number, 58.8 percent or 20/34, indicated that they were well prepared or very well prepared to employ innovative technologies such as the Internet and multimedia programs in delivering instruction. In addition, 72.7 percent or 24/33, of the vocational teachers reported that the integration of educational technology into the curriculum contributed very much to their preparation for teaching. The present finding is not consistent with the finding of the Department of Education which reported that only 20 percent of academic teachers felt very well prepared to integrate educational technology into classroom instruction. But in the present study, only 45.2 percent or 14/33, reported feeling well prepared or very well prepared to teach their students to use computer technology. Perhaps, the difference lies in the inability of the teachers to teach others to use the computer technology, rather than in their inability to use it themselves.

Conclusions and Recommendations

Several million young people will be educated in the US in the coming millenium and the quality of teacher preparation is seen as a key in meeting the needs of the 21st Century student. To provide an insight into the nature of the concerns about teachers' preparedness for the 21st Century classroom, the US Department of Education examined teacher preparation and qualifications in the public schools and found that a large number of teachers were not very well prepared to meet the challenges of the 21st Century classroom. The US Government has taken several steps to improve the quality of teaching in the coming years. In a similar direction, the Commonwealth of Pennsylvania has adopted several initiatives to ensure the quality of teachers in the State in the 21st Century.

The study by the US Department of Education focused solely on teachers of academic subjects and provided a rationale for developing appropriate teacher education programs for academic teachers. While that study provided a solution for academic teachers, it created the need to find a similar solution for vocational teachers. Thus, the present study attempted to shed light on competencies that might constitute program areas for preparing vocational teachers in the 21st Century. The study is limited in scope and depth because of the population size and the number of teachers responding to the questionnaire. Nonetheless, the respondents provided useful information that might guide program development considerations. Given the limitations of the study, it is recommended that an in-depth study of a larger population of vocational teachers should be pursued to provide a more thorough revelation for vocational teacher education program development in the 21st Century.

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